Atty. Docket No. DP-309337 (DEL01 P-465)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Art Unit	:	3661
Examiner	:	Brian J. Broadhead
Applicant	:	Michael I. Chia
Appln. No.	:	10/761,580
Filing Date	:	January 21, 2004
Confirmation No.	:	2605
For	:	TECHNIQUE FOR DETECTING TRUCK TRAILER FOR STOP AND GO ADAPTIVE CRUISE CONTROL

Dear Sir:

TRANSMITTAL OF APPEAL BRIEF
(PATENT APPLICATION - 37 CFR §41.37)

1. Transmitted herewith is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on May 4, 2007.

2. **STATUS OF APPLICANTS**

This application is on behalf of:

_X_ other than a small entity.

___ a small entity.

A verified statement:

___ is attached.

___ was already filed.

3. **FEE FOR FILING APPEAL BRIEF**

Pursuant to 35 USC §41(a)(6), the fee for filing the Appeal Brief is:

__ small entity	$250.00
_X_ other than a small entity	$500.00
Appeal Brief fee due:	$500.00

4. **EXTENSION OF TERM**

The proceedings herein are for a patent application and the provisions of 35 USC §41(a)(8) apply.

If an additional extension of time is required, please consider this a petition therefor.

(b) _X_ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition.

5. **TOTAL FEE DUE**

The total fee due is:

Appeal Brief fee:	$500.00
Extension fee (if any)	$ 0.00
TOTAL FEE DUE:	$500.00

6. **FEE PAYMENT**

___ Attached is a check in the sum of $500.00.

_X_ Charge Deposit Account No. 16 2463 the sum of $500.00 .

7. **Fee Deficiency**

_X_ If any additional extension and/or fee is required, this is a request therefor and to charge Deposit Account No. 16 2463.

and/or

_X_ If any additional fee for claims is required, charge Deposit Account No. 16 2463.

Respectfully submitted,

June 29, 2007
Date

/Gunther J. Evanina/

Gunther J. Evanina, Registration No. 35 502
Price, Heneveld, Cooper, DeWitt & Litton, LLP
695 Kenmoor, S.E.
Post Office Box 2567
Grand Rapids, Michigan 49501
(616) 949-9610

GJE/dac

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Dear Sir:

APPEAL BRIEF (37 CFR §41.37)

This brief is in furtherance of the Notice of Appeal, filed in this case on May 4, 2007.

The fees required under 350 USC 41(a)(6), and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains these items under the following headings, and in the order set forth below (37 CFR §41.37(c)):

I. Real Party in Interest

II. Related Appeals and Interferences

III. Status of Claims

IV. Status of Amendments

V. Summary of Claimed Subject Matter

VI. Grounds of Rejection to Be Reviewed on Appeal

VII. Argument

VIII. Conclusion

Appendix of Claims Involved in the Appeal

Evidence Appendix

Related Proceedings Appendix

The final page of this brief bears the attorney's signature.

I. Real Party In Interest

The real party in interest in this application is Delphi Technologies, Inc., a corporation of the state of Michigan having a place of business at Post Office Box 5052, Troy, Michigan 48007-5052, the assignment of which was recorded at Reel 014922, Frame 0764.

II. Related Appeals And Interferences

There are not any related appeals or interferences which will directly affect, or be directly affected by, or have a bearing on, the Board's Decision in this Appeal.

III. Status Of Claims

This is an Appeal from the rejection of claims 1-22. Claims 1-22 are pending and under consideration in the application. No claims have been allowed or withdrawn from consideration.

IV. Status Of Amendments

There have not been any amendments filed after the Final Rejection.

V. Summary Of Claimed Subject Matter

Independent claims 1, 9, 17 and 22 are under appeal.

Independent claim 1 is directed to a method for providing close range truck detection for a motor vehicle. In a first step, an initial range from a motor vehicle to a target vehicle located in front of the motor vehicle is measured. This is described, among other places, at paragraph 16 (page 4, lines 8-9), which states that the adaptive cruise control system "initially determines an initial range from the motor vehicle to a target." The next step in the process requires that an initial range rate between the motor vehicle and the target is measured. This is described, among other places, at paragraph 16 (page 4, lines 10-11), which states that the adaptive cruise control (ACC) system "determines whether a range rate of the target is above a predetermined rate." In a further step, the method involves "determining whether the initial range rate between the motor

vehicle and a target vehicle is a positive value exceeding a predetermined rate." This is described at paragraph 16 (page 4, lines 10-11) which states that "the system determines whether a range rate of the target is above a predetermined rate," and at paragraph 20 (page 5, lines 8-10), which describes an exemplary ACC system in which "the predetermined target rate may be about 0.5 meters per second" (a positive value). Next, claim 1 requires subsequent measuring of a current range, described at paragraph 17 (page 4, lines 14-16), which states that when "the range rate to the target is not above the predetermined rate, the system determines whether the initial range to the target is less than a current range to the target." The next step in claim 1 requires measuring a current range rate, which is described at paragraph 17 (page 4, lines 16-18), which states that "[w]hen the initial range to the target is less than the current range, the system provides an adjusted range that is utilized to control operation of the motor vehicle." The above passage from paragraph 17 also provides support for the next step of determining whether the initial range to the target is less than a current range when the range rate to the target remains above the predetermined rate. The last step in claim 1 involves providing a downwardly stepped range adjustment to obtain an adjusted range that is utilized to control operation of the motor vehicle. This is described in the above-referenced passage from paragraph 17, and at paragraph 19, which states that "the system may subtract a predetermined offset from a current range to provide the adjusted range."

Independent claim 9 is directed to an automotive system for providing close range truck detection for a motor vehicle. The system includes a processor 102, a range sensor 106 coupled to the processor, and a memory subsystem 104 coupled to the processor. The claimed arrangement is shown in FIG. 1 and described at paragraphs 21-23 of the specification. Claim 9 further requires that the memory subsystem stores code that when executed by the processor instructs the processor to perform steps that are substantially the same as the steps of method claim 1 and are supported by the same disclosure as claim 1.

Independent claim 17 is directed to an automotive system for providing close range truck detection for a motor vehicle which comprises a processor 102, a range sensor 106, a memory subsystem 104, in which the memory subsystem stores code that when executed by the processor instructs the processor to perform a routine substantially as illustrated in FIG. 3 and described at

paragraphs 26 through 30. Claim 17 further comprises a throttle subsystem 110 coupled to the processor. Throttle subsystem 110 is shown in FIG. 1 and described at paragraphs 21 and 22.

Independent claim 22 is directed to a method for providing close range detection of rear surfaces of a truck characterized by a primary reflective surface defined by a truck body component and a secondary reflective surface defined by an undercarriage of the truck, which undercarriage is offset forwardly of said primary reflective surface by a predetermined dimension. The method requires periodically measuring range, periodically measuring range rate, determining when the sensed range between successive measurements reflects an increase in spacing between the motor vehicle and the target truck, while simultaneously the sensed range rate between successive measurements reflects continued closure between the motor vehicle and the target truck, and adjusting the measured range and controlling operation of the motor vehicle utilizing the adjusted range. A routine for implementing the method of claim 22 is illustrated in FIG. 3 and described at paragraphs 26 through 30.

VI. Grounds Of Rejection To Be Reviewed on Appeal

1. Claim 22 is objected to on grounds that the claim implies use of a Doppler radar which would provide "two opposite results for the exact same value."

2. Claims 1-22 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

3. Claims 1-5, 7-13, 15-19 and 22 stand rejected under 35 U.S.C. §102(b) as being anticipated by Gilling (US005749426A).

4. Claims 6, 14, 20 and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gilling in view of Labuhn et al. (US006622810B2).

VII. Argument

Introduction

The claimed inventions solve a common problem with forward looking adaptive cruise control (ACC) systems which involves accurate determination of the range of a vehicle regardless of whether it is a truck trailer or other type of vehicle. Because of the low azimuth (e.g., 15

degree) of radar sensors typically employed in forward looking adaptive cruise control systems, there is a tendency for radar signals to be reflected predominantly from the rear axle of the vehicle rather than the rear end of the vehicle when the trailing vehicle utilizing the adaptive cruise control system is in close proximity to a leading truck trailer. As a result, the rear of the truck trailer is considerably closer to the vehicle hosting the adaptive cruse control system than the range measured by the radar of the adaptive cruise control system. Typically, the distance between the rear end of a truck trailer and the rear axle of a truck trailer is about 3.5 meters. For stop and go adaptive cruise control it is extremely beneficial to provide a technique for determining when the lead vehicle directly in front of the vehicle hosting the adaptive cruise control system is a truck trailer, and subtracting a predetermined distance from the measured range (e.g., 3.5 meters) to reduce or eliminate the potential for a collision when it is determined that the lead vehicle is a truck trailer in close proximity.

The invention addresses this problem and fulfills the need for recognizing when a lead vehicle is a truck trailer and making appropriate adjustments when the detected range is indicative of the distance from the vehicle hosting the ACC system to the rear axle of a leading truck trailer, rather than to the rear end of the leading truck trailer.

Hereafter, the vehicle hosting the adaptive cruise control system will generally be referred to as the "host vehicle," and a valid target vehicle (one in the same lane as the host vehicle) will be generally referred to as the "lead vehicle."

The invention provides an adaptive cruise control system in which a detected range (the distance between a lead vehicle and a host vehicle) is adjusted to provide an adjusted range that is utilized to control operation of the host vehicle whenever the range increases (as the reflection of radar is shifted forward from the rear of a truck trailer to the axle of the truck trailer) while the range rate decreases (i.e., indicating that the host vehicle is closing on the lead vehicle). It is of course physically impossible for the distance (range) between the rear of the lead vehicle and the host vehicle to increase while the range rate (i.e., the velocity of the lead vehicle relative to the host vehicle) is decreasing. The invention associates this incongruous condition with the host vehicle closing on a lead vehicle that is a truck trailer in close proximity to the host vehicle, and subtracts a fixed distance from the detected range (approximately equal to the distance between

the rear end and rear axle of a typical truck trailer) to obtain an adjusted range that is used to control vehicle operation, thereby providing safer operation of the adaptive cruise control system.

In the first step of the claimed method, the distance from the lead vehicle to the host vehicle is measured (e.g., by radar). This distance is called the "initial range." In a second step, an "initial range rate" is measured. The range rate is approximately equal to the instantaneous velocity of the lead vehicle minus the instantaneous velocity of the host vehicle. In other words, range rate is the velocity of one vehicle relative to the other. On an uncongested highway in which most vehicles are moving at about the same speed (e.g., at approximately the posted speed limit), the range rate, when it can be determined (i.e., when there is a lead vehicle within the detection range of the sensor used for measuring range), will usually be positive (when the lead vehicle is pulling away) or zero (when the lead vehicle and the host vehicle are moving at the same speed). However, there will be occasions in which the host vehicle will close on a lead vehicle on an uncongested highway. The range that is maintained by a typical adaptive cruise control system is a function of the velocity of the host vehicle. Because of this, the adaptive cruise control system maintains a distance between the vehicles (range) that is typically sufficient at normal highway speeds to prevent a shift in the range detection from the rear end of a truck trailer to the axle of the truck trailer. However, in more congested and/or slower moving traffic, the minimum range is typically adjusted downwardly, such as inversely proportional to the speed of the vehicle, as is disclosed in the applied Gilling patent. In this case, it is highly desirable that the adaptive cruise control system is capable of distinguishing between a lead vehicle that is a truck trailer and one that is another type of vehicle, such as an automobile.

In a third, step, it is determined whether the initial range rate exceeds a predetermined value. A suitable predetermined range rate that may be employed is zero. In this example, the third step would involve determining whether the initial range rate is positive (i.e., determining whether the host vehicle is closing on the lead vehicle).

In a fourth step, if the host vehicle is closing on the lead vehicle, the distance from the rear end of the lead vehicle to the host vehicle is again measured to obtain a "current range."

In a fifth step, the velocity of the host vehicle relative to the lead vehicle is again measured to obtain a "current range rate."

In a sixth step, it is determined whether the "initial range" is less than the "current range." When the initial range is less than the current range then one of two possibilities exists. Either the lead vehicle is pulling away (i.e., increasing its distance) from the host vehicle, or the host vehicle is in close proximity to a truck trailer and radar reflections from the adaptive cruise control sensor are shifting from the rear end of the truck trailer toward the axle of the truck trailer. However, the second part of the sixth step distinguishes between these possibilities by determining whether the current range rate is above the predetermined range rate (e.g., above zero). For example, when the predetermined range rate is zero, the remaining process steps are performed if the range rate is positive (i.e., when the measured velocity of the host vehicle relative to the lead vehicle is positive). If the initial range is less than the current range and the range rate is negative, then the lead vehicle is actually pulling away from the host vehicle. However, if the initial range is less than the current range and the range rate is positive, then the lead vehicle is a truck trailer in sufficiently close proximity to the host vehicle that the measured range is being determined from the axle of the lead vehicle to the host vehicle, rather than from the rear end of the lead vehicle to the host vehicle. In such case, it is highly desirable to adjust the measured range and use the adjusted range to control the vehicle in order to prevent a potential collision. Accordingly, in a last step of the claimed method, a predetermined value (e.g., the typical distance between the rear end of a truck trailer and the rear axle of a truck trailer) is subtracted from the measured range to provide an adjusted range that is used to control the host vehicle.

In other words, the invention involves adjusting the detected range and using the adjusted range to control operation of the host vehicle whenever the measured target range increases while at the same time the measured range rate decreases.

Objection To Claim 22

Claim 22 has been objected to because the limitation of "determining when the sensed rate between successive measurements reflects . . . simultaneously, the sensed range rate between successive measurements reflects . . ." is believed to be "reciting the same measurement going in two different directions at the same time," thereby "implying Doppler radar is being used to

measure range rate," and resulting in the claim requiring "two opposite results for the exact same value."

The stated objection is unclear. There does not appear to be anything in claim 22 that would suggest that Appellant is implying the use of Doppler radar to measure range rate. Further, there is nothing in claim 22 to suggest that Appellant is taking measurements "going in two different directions at the same time." Finally, there is nothing in the language of claim 22 to suggest a requirement for obtaining "two opposite results for the exact same value."

Claim 22 requires periodically measuring range and periodically measuring range rate. Range and range rate are two entirely different measurements—they are not the same value. Range is the distance between the lead vehicle and the host vehicle, and range rate is the velocity of the host vehicle relative to the lead vehicle. While it is conceivable that range and range rate could have the same value (e.g., a 20 meter per second range rate and a 20 meter range), range rate and range have different units, and will more typically have different values. It is a simple matter to determine when the sensed range between successive measurements indicates or reflects an increase in spacing between the host vehicle and the lead vehicle while the sensed range rate between successive measurements indicates or reflects closure between the host vehicle and the lead vehicle (which only occurs, or at least typically occurs, when the host vehicle is both in close proximity to, and closing on, a truck trailer). Such incongruous measurements are attributable to the low azimuth of the radar sensor (typically about 15 degrees), which causes the detected range of a truck trailer to shift from the rear of the truck trailer when the host vehicle is a substantial distance from the rear of the truck trailer (typically about 20 meters or more) and toward the rear axle of the truck trailer when the host vehicle is relatively close to the rear end of the truck trailer (typically less than 20 meters). It is believed that once the difference between the range and range rate measurements is understood, it will be apparent that the objection to claim 22 is improper.

Rejection Under 35 U.S.C. §112

Claims 1-22 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. It is the Examiner's belief that "[t]he

specification repeatedly discloses the invention adding to the range when the range rate is above a predetermined rate . . .," and that the recited requirement for "providing a downwardly stepped range adjustment" is not supported by the specification. More specifically, the Examiner has stated that paragraphs 16, 17 and 19 teach "adding to the range when the range rate is above a predetermined rate." Paragraph 16 is completely silent with respect to addition or subtraction from the measured range. Paragraph 17 states that when the initial range to the target is less than the current range, the system provides an adjusted range. In paragraph 17, it is also stated that the system adds a predetermined offset when the range rate is above a predetermined target rate. However, the addition of an offset does not necessarily imply adding to a measured range and does not preclude providing a downward step adjustment, since an offset can be either positive or negative. Finally, contrary to the Examiner's statement, paragraph 19 states that "the system may <u>subtract</u> a predetermined offset from a current range to provide the adjusted range." (Emphasis added.) The references in the specification to adding <u>the</u> predetermined offset <u>back</u> to the adjusted range refers to a return to reliance on the measured range as opposed to the adjusted range to control operation of the motor vehicle when the conditions indicating that the host vehicle is closing on a truck trailer in close proximity no longer exist. This is illustrated by box 320 in FIG. 3, in which the offset is restored when the <u>target's</u> range rate increases.

Finally, it must be understood that the method may utilize the initial range rate between the host vehicle and the lead or target vehicle (i.e., the velocity of the host vehicle relative to the lead vehicle) or, equivalently, the target's range rate (i.e., the velocity of the lead or target vehicle relative to the host vehicle). The claims are consistent with various aspects of the specification and drawings which disclose that a downwardly stepped range adjustment is made whenever successive range rate measurements are inconsistent with successive range measurements. Appellant has discovered that such inconsistent measurements are obtained when range measurements shift from the rear end of a truck trailer to the rear axle of the truck trailer when the host vehicle is both closing on, and in close proximity to a truck trailer. Whether an adjustment to the measured range is made based on successive range rate measurements of either the host vehicle or the lead vehicle is a matter of convention. Similarly, whether the adjusted range is obtained by subtracting a positive value or adding a negative value is a matter of

convention. However, the claims define the invention in terms of a particular convention in which a downwardly stepped range adjustment is made when successive range measurements increase while successive range rate measurements indicate that the host vehicle is closing on the lead vehicle.

It is respectfully submitted that an understanding of the fact that different conventions may be used in conjunction with an understanding of the conventions actually used in the claim must necessarily lead to the conclusion that the rejection is improper such that reversal is appropriate. Further, there is literal support in the written description for subtracting a predetermined offset (paragraph 19).

Rejections Under 35 U.S.C. §102

Claims 1-5, 7-13, 15-19 and 22 stand rejected under 35 U.S.C. §102(b) as being anticipated by Gilling (US005749426A).

Gilling does not teach or suggest anything about the problems associated with a forward shifting of reflected radar from a sensor of an adaptive cruise control system from the rear end of a truck trailer toward the rear axle of a truck trailer when a host vehicle is closing on a leading truck trailer while in close proximity to the truck trailer (e.g., less than about 20 meters). Further, Gilling does not teach anything about adjusting a measured range or using an adjusted range to control the host vehicle.

As with generally all adaptive cruise control systems, the system disclosed by Gilling employs means for measuring range (the distance between vehicles) and range rate (the relative velocity of one of the vehicles with respect to the other). As stated in the Office Action, this is disclosed at column 3, lines 28-33 of the Gilling patent. However, contrary to the statements in the Office Action, Gilling does not teach "determining whether the initial range to the target is less than a current range to the target when the range rate to the target remains above the predetermined rate" or "providing a downwardly stepped range adjustment when the initial range to the target is less than the current range to the target and the range rate remains above the predetermined rate." The passage (at column 6, lines 31-55) relied upon in the Office Action only discloses an adaptive cruise control system which employs a method in which a targeted

range is calculated based on a driver selected headway (the amount of time from when a lead vehicle passes a given point to the time that the host vehicle passes the same point) when the host vehicle is moving at a velocity greater than a predetermined velocity (e.g., 40 kph), and in which the target range is a fixed value that is inversely proportional to the driver selected headway when the host vehicle is moving at a velocity less than the predetermined velocity.

The method disclosed by Gilling utilizes entirely different techniques to solve an entirely different problem. In fact, the range adjustment technique of Gilling and Appellant's method may be used together, substantially independent of one another. Gilling adjusts "desired range," not the detected or measured range. Gilling does not distinguish between a lead vehicle that is a truck trailer and one that is not. If the techniques of Gilling are employed without Appellant's method, a driver could select a desired headway of 1.5 seconds, which, as disclosed by Gilling, "might result in a desired range at rest of five meters." Without driver intervention, this would result in the vehicle stopping about 1.5 meters behind a truck trailer rather than the desired five meters (assuming a typical distance of 3.5 meters from the rear end of a truck trailer to the rear axle of a truck trailer). Thus, employing the techniques of Gilling does not involve "determining whether the initial range to the target is less than a current range to the target when the range rate to the target remains above the predetermined rate." Nor does the Gilling techniques involve "providing a downwardly stepped range adjustment when the initial range to the target is less than the current range to the target and the range rate remains above the predetermined rate." Finally, because Gilling does not teach or suggest a downwardly stepped range adjustment of a detected or measured range, Gilling cannot possibly utilize an adjusted range to control operation of a motor vehicle.

There is not any reasonable relationship between an adaptive cruise control system that attempts to maintain a fixed range (e.g., five meters) when the host vehicle is moving at less than a predetermined velocity (e.g., 40 kph), as disclosed by Gilling, and an adaptive cruise control system that is capable of distinguishing when a range detector is measuring the distance from the rear axle of a truck trailer rather than the rear end of a truck trailer and making appropriate correction. As stated above, the method of Gilling will not make the desired correction and will not achieve the same results as the claimed invention.

A prior art reference that fails to teach all steps of a claimed method does not anticipate the claimed method. Gilling fails to teach at least four of the required steps in the claimed method. Specifically, Gilling does not teach steps of: (1) determining whether the initial range rate between the motor vehicle and the target is a positive value exceeding a predetermined rate; (2) determining whether the initial range to the target is less than a current range to the target when the range rate of the target remains above the predetermined rate; (3) providing a downwardly stepped range adjustment when the initial range to the target is less than the current range to the target and the range rate remains above the predetermined rate; and (4) utilizing the adjusted range to control operation of the motor vehicle.

Because Gilling does not teach all of the required steps, and because no amount of manipulation of the parameters of Gilling will achieve the results of the claimed inventions, Gilling does not anticipate the claimed inventions, and does not make the claimed inventions obvious to a person of ordinary skill in the art. The above arguments apply to all pending claims, since all of the claims require the four limitations substantially as recited above. Therefore, a reversal of the rejection is appropriate.

Rejections Under 35 §103

Claims 6, 14, 20 and 21 stand rejected as being unpatentable over Gilling in view of Labuhn et al. (US006622810B2).

Because Gilling does not teach the invention as set forth in independent claims 1, 9 and 17, and because Labuhn et al. is only relied upon to the extent that it is alleged to disclose that "alarm capability was well known to one of ordinary skill in the art at the time of the invention," dependent claims 6, 14, 20, and 21 are allowable for at least the reasons set forth above with respect to independent claims 1, 9 and 17.

VIII. Conclusion

Because the applied prior art references do not anticipate or make obvious the required steps of detecting when an adaptive cruise control system is making incorrect range measurements based on reflections from a rear axle of a truck trailer rather than the rear end of a truck trailer, or adjusting the measured range to reduce the risk of collision with a truck trailer, a reversal of all rejections is appropriate and is earnestly solicited.

Respectfully submitted,

June 29, 2007
Date

/Gunther J. Evanina/
Gunther J. Evanina, Registration No. 35 502
Price, Heneveld, Cooper, DeWitt & Litton, LLP
695 Kenmoor, S.E.
Post Office Box 2567
Grand Rapids, Michigan 49501
(616) 949-9610

GJE/dac

Appendix of Claims (35 USC §41.37(c)

1. A method for providing close range truck detection for a motor vehicle, comprising the steps of:

measuring an initial range from a motor vehicle to a target located in front of said motor vehicle;

measuring an initial range rate between the motor vehicle and the target;

determining whether the initial range rate between the motor vehicle and the target is a positive value exceeding a predetermined rate;

subsequently measuring a current range from the motor vehicle to the target;

measuring a current range rate between the motor vehicle and the target;

determining whether the initial range to the target is less than a current range to the target when the range rate to the target remains above the predetermined rate; and

providing a downwardly stepped range adjustment when the initial range to the target is less than the current range to the target and the range rate remains above the predetermined rate, wherein the adjusted range is utilized to control operation of the motor vehicle.

2. The method of claim 1, further comprising the step of:

adding a predetermined offset to the adjusted range when the range rate is above a predetermined target rate.

3. The method of claim 1, wherein the adjusted range is provided by subtracting a predetermined offset from the current range, and wherein the predetermined offset is about 5 meters.

4. The method of claim 3, wherein the predetermined offset is only subtracted from the current range when the current range is less than about 20 meters.

5. The method of claim 1, wherein the adjusted range is provided when a sign of a calculated range rate that is based on a differentiated range does not match a sign of a sensor provided range rate, and wherein the predetermined rate is about 0.0 meters per second.

6. The method of claim 1, further comprising the step of:

providing an alarm when the adjusted range is less than a desired minimum distance.

7. The method of claim 1, wherein the operation of the motor vehicle is controlled by initiating deceleration by a throttle subsystem of the motor vehicle.

8. The method of claim 7, wherein the operation of the motor vehicle is also controlled by initiating braking by a brake subsystem of the motor vehicle.

9. An automotive system for providing close range truck detection for a motor vehicle, comprising:

a processor;

a range sensor coupled to the processor; and

a memory subsystem coupled to the processor, the memory subsystem storing code that when executed by the processor instructs the processor to perform the steps of:

measuring an initial range from a motor vehicle to a target located in front of said motor vehicle;

measuring an initial range rate between the motor vehicle and the target;

determining whether the initial range rate between the motor vehicle and the target is a positive value exceeding a predetermined rate;

subsequently measuring a current range from the motor vehicle to the target;

measuring a current range rate between the motor vehicle and the target;

determining whether the initial range to the target is less than the current range to the target when the range rate to the target remains above the predetermined rate; and

providing a downwardly stepped range adjustment when the initial range to the target is less than the current range to the target and the range rate remains above the predetermined rate, wherein the adjusted range is utilized to control operation of the motor vehicle.

10. The system of claim 9, wherein the code when executed by the processor instructs the processor to perform the additional step of:

adding a predetermined offset to the adjusted range when the range rate is increasing above a predetermined target rate.

11. The system of claim 9, wherein the adjusted range is provided by subtracting a predetermined offset from the current range, and wherein the predetermined offset is about 5 meters.

12. The system of claim 11, wherein the predetermined offset is only subtracted from the current range when the current range is less than about 20 meters.

13. The system of claim 9, wherein the predetermined rate is about 0.5 meters per second.

14. The system of claim 9, further comprising:

an alarm coupled to the processor, wherein the code when executed by the processor instructs the processor to perform the additional step of:

activating the alarm when the adjusted range is less than a desired minimum distance.

15. The system of claim 9, further comprising:

a throttle subsystem coupled to the processor; wherein the operation of the motor vehicle is controlled by initiating deceleration by the throttle subsystem.

16. The system of claim 15, further comprising:

a brake subsystem coupled to the processor, wherein the operation of the motor vehicle is also controlled by initiating braking by the brake subsystem.

17. An automotive system for providing close range truck detection for a motor vehicle, comprising:

a processor;

a range sensor coupled to the processor;

a memory subsystem coupled to the processor, the memory subsystem storing code that when executed by the processor instructs the processor to perform the steps of:

measuring an initial range from a motor vehicle to an object located in front of said motor vehicle;

measuring an initial range rate between the motor vehicle and the object;

determining whether the object is a valid target;

determining whether a range rate of the valid target is a positive value exceeding a predetermined rate;

subsequently measuring a current range from the motor vehicle to the target;

measuring a current range rate between the motor vehicle and the target;

determining whether the initial range to the valid target is less than the current range to the valid target when the range rate to the valid target remains above the predetermined rate; and

subtracting a predetermined offset from the current range to provide an adjusted range when the initial range to the valid target is less than the current range to the valid target and the range rate remains above the predetermined rate, wherein the adjusted range is utilized

to control operation of the motor vehicle; and

a throttle subsystem coupled to the processor, wherein the operation of the motor vehicle is controlled by initiating deceleration by the throttle subsystem.

18. The system of claim 17, wherein the code when executed by the processor instructs the processor to perform the additional step of:

adding the predetermined offset to the adjusted range when the range rate is increasing above a predetermined target rate.

19. The system of claim 17, wherein the predetermined offset is about 5 meters and the predetermined rate is about 0.5 meters per second, and wherein the step of subtracting the predetermined offset from the current range to provide the adjusted range when the initial range to the valid target is less than the current range to the valid target and the range rate is below the predetermined rate is only performed when the current range is less than about 20 meters.

20. The system of claim 17, further comprising:

an alarm coupled to the processor, wherein the code when executed by the processor instructs the processor to perform the additional step of:

activating the alarm when the adjusted range is less than a desired minimum distance.

21. The system of claim 20, further comprising:

a brake subsystem coupled to the processor, wherein the code when executed by the processor instructs the processor to perform the additional step of:

initiating braking by the brake subsystem when the adjusted range is less than the desired minimum distance.

22. A method for providing close range detection of rear surfaces of a truck characterized by a primary reflective surface defined by a truck body component and a secondary reflective surface defined by an undercarriage of said truck offset forwardly of said primary reflective surface by a predetermined dimension, said method comprising the steps of:

periodically measuring range from a trailing motor vehicle to a rear surface of a target truck;

periodically measuring a range rate between the motor vehicle and the target truck;

determining when the sensed range between successive measurements reflects an increase in spacing between the motor vehicle and target truck and, simultaneously, the sensed range rate between said successive measurements reflects continued closure between the motor vehicle and target truck; and

adjusting the most recently measured range value by adding a range adjustment factor substantially equaling the predetermined offset: wherein the adjusted range is utilized to control operation of the motor vehicle.

Evidence Appendix (35 USC §41.37(c))

There was no evidence submitted during this application under 37 CFR §1.130, 1.131 or 1.132 or any evidence entered by the Examiner and relied upon by Appellant in the appeal.

Related Proceedings Appendix (35 USC §41.37(c))

There are no related appeals or interferences pending during this appeal.